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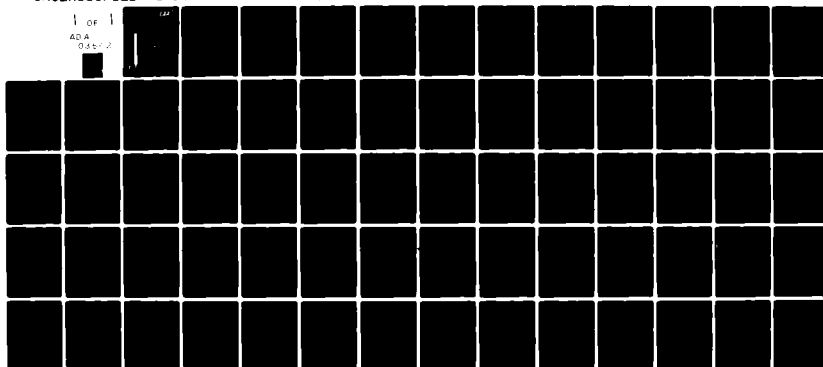
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AN EXAMINATION OF THE RELIABILITY OF THE ORGANIZATIONAL ASSESSM--ETC(U)
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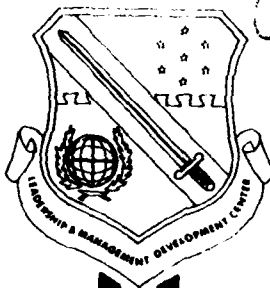
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AN EXAMINATION OF THE RELIABILITY OF THE
ORGANIZATIONAL ASSESSMENT PACKAGE (OAP).

MAJ LAWRENCE O. SHORT, USAF
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This Technical Report has been reviewed and is approved for publication.

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Abstract

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Background

The concept of reliability is central to any evaluation of an assessment instrument. The importance of reliability can be seen in two ways. First, by definition, reliability means consistency, repeatability, and the sense of confidence we can have in any survey scores. As Miller (1966) notes, "Reliability is the extent to which measuring operations correlate with themselves when applied repeatedly to the same subjects" (p. 17). Lyman (1971) says reliability refers to the "reproducibility" of results (p. 25). Finally, Cronbach (1960) believes reliability "always refers to consistency throughout a series of measurements" (p. 126). Reliability is an important measure, then, of how much trust can be put in results of a survey or instrument. A survey that gives different results every time even when administered to the same people under the same conditions would not be usable and results would not be interpretable.

Second, reliability and validity are closely related. Stanley and Hopkins (1972) point out, "Reliability is a necessary but not sufficient condition for validity" (p. 114). Cronbach (1960) further defines this relationship by stating the "validity coefficient cannot exceed the square root of the reliability coefficient" (p. 129). Validity, then, is simply the ability of the instrument to do what we want it to do (Lyman, 1971); it is the most essential feature of an instrument. Since reliability limits validity and is a prerequisite for validity, accurate measurement of reliability is an important consideration.

Methods of Assessing Reliability

Several methods of assessing reliability are available. Carmines and Zeller (1979) list four such methods: the retest method (stability); the

alternative-form method; the split-halves method; and the internal consistency methods, primarily Kuder-Richardson 20 and 21 (KR20 and KR21) and Cronbach's alpha. Of these four methods, two are appropriate in the present situation and two are not. The alternative form method is not applicable here since the instrument in question, the Organizational Assessment Package (OAP), exists in only one form. Similarly, the split-half method is not applicable because of accuracy problems. Split-half coefficients are calculated by dividing items in half and correlating one half of the items with the other half of the items. This reduction in number of items correlated spuriously lowers reliability coefficients (Cronbach, 1960). The split-half method, therefore, must use a formula such as the Spearman-Brown correction formula to estimate the full-scale reliability from the half-scale coefficient. The use of this formula adds more inconsistency, since it is only an estimate of the original full-scale reliability. This is an especially serious problem for an instrument such as the OAP that provides factor rather than full scale scores.

Retest reliability (stability), however, is necessary to calculate because of the way the OAP is used. The OAP is used as both a data gathering and consulting evaluation tool. As a result, the stability of OAP results for approximately six week and six month intervals is important information. Used alone however, retest coefficients are insufficient, and high coefficients alone should not be taken as an indication of good reliability (Nunally and Durham, 1975). Therefore, use of a second reliability assessment method, internal consistency, provides important additional verification. Among the available options, the KR20 and KR21 procedures are inappropriate since the OAP items are not scored according to an all or none (right or wrong) system (Anastasi, 1976). Cronbach's alpha, however, provides an internal consistency measure for multiple scored items. The

retest and Cronbach's alpha procedures appear, therefore, to be the most appropriate methods to assess OAP reliability. Further comments on both of these methods follow.

Retest Method. As briefly mentioned, retest reliability is important to calculate because the OAP is used both as a diagnostic tool and as an evaluation tool. This information is necessary, for example, to assist in developing equations to help control for regression toward the mean, a threat to the internal validity of consulting evaluation results (Campbell and Stanley, 1963). Determining the stability of scores over approximately a six week interval (roughly the period between data collection and feedback) and a six month interval (roughly the period between feedback and evaluation) was an appropriate starting place to begin gathering this information.

Although the retest method seems a reasonable approach to determining validity, it does have some drawbacks as discussed by Carmines and Zeller (1979). First, evaluation requires two measurements of the same individuals. This requirement may lead to increased expense and other practical problems. Further, the optimum time interval between testings is often difficult to determine. If the interval is too short, coefficients may be inflated due to memory effects after the pretest. If the interval is too long, the environmental situation or even the underlying theoretical construct may change, resulting in underestimates of reliability. Finally, the problem of reactivity or pretest sensitization (Bracht and Glass, 1968) may occur. In this case, the change from pretest to posttest can be caused just by the pretest. This seems particularly likely in an organizational setting when data collection causes and directs energy (Nadler, 1977) and especially costly in a setting where a primary goal is collection of valid data (Argyris, 1970). These problems do not eliminate the necessity for stability coefficients, but they do point out the need for an additional method of determining factor reliability.

Internal Consistency Method: Cronbach's Alpha. Generally the most popular of the internal consistency methods, Cronbach's alpha can be obtained from a single survey administration and eliminates the inconsistency of splitting items. Its calculation is based on the number of items in a scale or factor and the mean interitem correlation for that same scale or factor. Usually, therefore, as the average interitem correlation and/or the number of items increase, so does the value of alpha. These procedures must be balanced, however. For example, there is an upper bound on significant increases in alpha from adding items. In addition, adding items that reduce the interitem correlation will not increase alpha.

It should also be noted that alpha is often considered the lower bound of internal consistency reliability. Thus, alpha may generally be considered a conservative estimate of the true reliability of a scale or factor (Carmines and Zeller, 1979).

Purpose of the Report

With the previous background in mind, the present report has two purposes. The first purpose is assessing the current reliability of OAP factors. Cronbach's alpha coefficients have not been formally studied since the original OAP development (Hendrix and Halverson, 1979), and retest coefficients have never been studied and published. For both reasons, new information was needed. The second purpose of the report is anchored to the future of the OAP. The instrument is currently undergoing a complete factor-by-factor revision after two years of use. The current report will provide important information helpful for decisions about which items and factors to retain, revise, or delete.

In general format, the report consists of two studies, each using a different sample derived in different ways. As such, the methodology and results of each will be reported separately.

Method

Study 1

Sample. The sample for this study consisted of 19 Air Force personnel attending the Academic Instructor School (AIS) at Maxwell Air Force Base, Alabama. Of the 19 people, 18 were male, one was female; 16 were enlisted, three were officers. Among the officers were one each second lieutenant, captain and lieutenant colonel. Among the enlisted people, five were staff sergeants, five were technical sergeants, five were master sergeants, and one was a senior master sergeant. The average age of the people in the sample was 33 years.

The total group of 19 represented approximately 48% attrition from a beginning sample of 36 personnel who took the survey the first time. All 36 were volunteers who came after normal class periods to take the survey. Of the original 36, the current 19 returned to take the survey a second time. In some cases, the number of people (N) may go lower due to missing responses.

Instrumentation. The OAP is a 109 question survey designed by the Air Force Human Resources Laboratory to aid the Leadership Management and Development Center (LMDC) in its mission to: (a) provide management consulting services to Air Force commanders upon request, (b) to provide leadership and management training, and (c) to conduct research on Air Force systemic issues with information within the accumulated data base (Hendrix and Halverson, 1979).

Administration of the survey is the first step in the consultation process. The survey is given to a stratified random sample of the organization to which LMDC has been invited. The results of the survey are an important feature in the assessment of the organization. The results are handled in a

confidential manner between LMDC and the client. After approximately five to six weeks for analysis, feedback of data is then provided to commanders and supervisors within the organization.

When specific problems are encountered, a consultant and supervisor develop a management action plan designed to reduce the problem at that level of the organization. Within six months, the consulting team returns to readminister the survey instrument as a means to help assess the impact of the consulting process.

The data from each consulting effort are stored in a cumulating data base for research purposes. These data are aggregated by work group codes developed for this instrument. The data may be recalled by demographics such as personnel category, age, sex, Air Force Specialty Code (AFSC), pay grade, time in service, and educational level. Through factor analysis, the 93 attitudinal items are combined into 24 measures which cover job content factors, job interferences, and various types of supervisory and organizational climates.

Procedure. The volunteer AIS students were requested to take the OAP at the beginning and at the end of their school, an interval of approximately five weeks. The OAP (Appendix A) was administered using the standard response sheet (Appendix B) but with modifications of the standard administration script (standard script appears as Appendix C). The volunteers were told the purpose of the survey was to help LMDC personnel learn more about the OAP, and that their help was much appreciated. Concerning the demographic factors, four were completed and coded as usual: sex, age, pay grade and duty AFSC. For duty AFSC, all persons were asked to enter the AFSC of the job they left when they came to AIS. In addition, this was the job situation each person was asked to recall on both test and retest when

responding to the OAP content items. The blocks for supervisor's code were left blank, work group code was coded as all ones, and each person's seminar number was coded in the first three columns of the primary AFSC block. The remaining four columns were left blank. For each entry, each person darkened the corresponding oval beneath that entry. This information was used from test to retest for purposes of matching a person by administration time without identifying an individual. The graphic showing changes in instructions is contained at Appendix D.

After completion of the demographics on the answer sheet, standard instructions were given for completion of the OAP attitudinal items. Everyone was given as much time as was needed to complete the survey on both occasions, and completed survey response sheets were deposited in a central location. Both administrations of the OAP took place in the AIS auditorium under ideal environmental conditions.

Data were analyzed two ways. For test-retest analysis, a Pearson product moment correlation coefficient was calculated between results of the two administrations. For internal consistency, a Cronbach's alpha procedure was computed on both test and retest samples. Both statistics were computed using the Statistical Package for the Social Sciences (Nie, et al, 1975; Hull & Nie, 1979).

For the test-retest correlation, a standard level of significance was used ($p < .05$). For the Cronbach's alpha, however, a more direct standard of comparison was used. Hendrix and Halverson (1979) noted that a coefficient of .70 or above indicates "...Factors which are reliable..." (p.22). Carmines and Zeller (1979) hold that "...reliabilities should not be below .80 for widely used scales." (p.51). For purposes of this study, alpha coefficients were considered unacceptable if they were below .70 on either test or retest. This was also taken as evidence of need for factor revision. Alpha coefficients were considered acceptable, however, if they

exceeded .70 on both test and retest, good if they exceeded .80 on both test and retest and high if both coefficients exceeded .90. In addition, any factor with alpha coefficients varying by more than plus or minus .10 from test to retest was considered as problematic.

For purpose of this study, only OAP primary factors were used. Other factors used by consultants are simply additive or multiplicative combinations of items represented by other factors, or, in some cases, are combinations of other factors. Completing calculations for these "factors" was considered repetitious and possibly misleading.

Study 2

Sample. The sample for this study consisted of 399 Air Force personnel assigned to Air Force Security Police squadrons at six installations within the continental United States. Average age of the people in the sample was 23 years. Of the 399 people, 392 were male and 7 female. Racially, 83.0% were White, not Hispanic; 11.0% were Black, not Hispanic; 2.5% were Hispanic; 2.0% were Other; .8% were Native American; and .8% were Asian-Pacific Islanders. A total of 39.9% of the respondents had less than two years military service and 24.5% had four years or more service in the Air Force. Of the 399 total, 98.7% (390) were enlisted, 1.0% (4) were officers, and .3% (1) was a civilian.

Instrumentation. The instrument used here is still the OAP. The information is identical to that contained in the instrumentation section of Study 1.

Procedure. The original population for this study consisted of approximately 3200 Air Force personnel assigned to Air Force Security Police squadrons at six installations within the continental United States. This group included personnel assigned to units which were considered as a control group and also personnel assigned to units which were a test group undergoing an organizational redesign. The personnel for Study 2 came only from the control group, which consisted of approximately 1600 people.

Since individual OAP respondents are not identified during administration, it was necessary to derive some methodology for matching responses gathered prior to and after the redesign. The method chosen was to take a rather conservative approach on matching using selected demographics contained in the first sixteen questions of the OAP. The items chosen for exact match included base, personnel category (officer, enlisted, civilian), sex, marital status, ethnic group, education level, the first three digits of the alpha numeric code indicating work group of assignment within the organization, and the first three digits of the numeric code identifying the Air Force specialty code of the respondent. In addition, the data were also matched on demographics which may have varied during the six month period from one OAP administration to the next. Thus, the demographics of age, total years in the Air Force, total months in present career field, total months at the current duty station, and military pay grade were allowed to match either exactly or vary by one response alternative to allow for promotion or the passage of time. Reduction of the sample size from 1600 to 399 may seem extreme. However, it was better to be conservative; whenever more than one "post" match for a "pre" survey was encountered, all of the suspect records were eliminated. This undoubtedly resulted in substantially fewer matches than would otherwise be expected.

The same method of data analysis and criteria for results were used in Study 2 as were used Study 1 (see Procedure section, Study 1) with one exception. Because of the increased sample size, a significance level of less than .001 ($p < .001$) seemed appropriate to help insure practically significant as well as statistically significant results. Again, as in Study 1, only primary OAP factors were used.

Results

Study 1

The results of the first study may be seen in Tables 1 and 2. From Table 1, all test-retest coefficients were significant at $p < .05$ level or better. Of these, however, three factors were lower than the others and seem to warrant further research. These three were Factor 804 (Job Feedback), 810 (Job Performance Goals), and 821 (Work Group Effectiveness). Two of these three factors also showed significant differences between test and retest means. In addition to the correlation coefficients, Table 1 shows the means, standard deviations, and standard errors of measurement for both test and retest, the sample size for each factor and results of correlated means t-tests (DuBois, 1965). Despite the convention of a capital N being reserved for discussion of population parameters and a lower case n dealing with sample statistics, the capital N is used throughout the report to denote sample size. The lower case n will denote number of items in a factor in the reporting of Cronbach's alpha results.

Table 2 shows the results of the Cronbach's alpha analysis on the same data. The sample size, coefficient alpha, average interitem correlation, and number of items per factor are reported for both test and retest conditions. Based on criteria set forth in the methodology section, five factors showed a coefficient below .70 on either test or retest and need revision work. These are Factor 800 (Skill Variety), Factor 801 (Task Identity), Factor 804 (Job Feedback), Factor 805 (Work Support) and Factor 810 (Job Performance Goals). An additional factor, 816 (Desired Repetitive Easy Tasks), did not show either coefficient to be above .70. Under the

Table 1

Pearson Product Moment Correlation Coefficients
and Supporting Data for Each of the OAP Primary Factors
on Study 1 Test-Retest Reliability Analysis (Five Week Interval)

Factor		Test	Retest	N	t	r
800	\bar{x}	5.31	5.64	18	-2.00	.86***
(Skill	SD	1.37	1.28			
Variety)	S_e	.51	.48			
801	\bar{x}	5.71	5.76	19	-.26	.76***
(Task	SD	1.38	1.06			
Identity)	S_e	.67	.52			
802	\bar{x}	6.16	6.24	19	-.50	.88***
(Task	SD	1.43	1.34			
Significance)	S_e	.49	.46			
804	\bar{x}	5.21	5.74	19	-2.16*	.51*
(Job	SD	1.16	.98			
Feedback)	S_e	.81	.69			
805	\bar{x}	5.02	5.11	19	-.45	.78***
(Work	SD	1.27	1.28			
Support)	S_e	.60	.60			
806	\bar{x}	6.04	6.02	19	.10	.72***
(Need for	SD	1.27	1.27			
Enrichment)	S_e	.67	.67			
810	\bar{x}	5.61	5.08	18	2.40*	.65**
(Job Per-	SD	.72	1.23			
formance Goals)	S_e	.43	.73			
811	\bar{x}	5.97	6.11	19	-.55	.75***
(Pride)	SD	1.53	1.36			
	S_e	.77	.68			
812	\bar{x}	5.58	5.83	18	-1.64	.81***
(Task	SD	1.08	.96			
Character-	S_e	.47	.42			
istics)						

Factor		Test	Retest	N	t	r
813	\bar{x}	4.83	4.92	19	-.34	.69***
(Task	SD	1.56	1.37			
Autonomy)	S_e	.87	.76			
814	\bar{x}	4.97	5.12	17	-.79	.87***
(Work	SD	1.46	1.49			
Repetition)	S_e	.53	.54			
816	\bar{x}	2.44	3.00	18	-2.05	.72***
(Desired	SD	1.26	1.65			
Repetitive	S_e	.67	.87			
Easy Tasks)						
817	\bar{x}	5.19	5.39	19	-.95	.78***
(Advance-	SD	1.39	1.34			
ment/Recog-	S_e	.65	.63			
nition)						
818	\bar{x}	5.20	5.37	18	-.74	.85***
(Management	SD	1.73	1.84			
Supervision)	S_e	.67	.71			
819	\bar{x}	5.02	5.22	19	-1.07	.90***
(Supervi-	SD	1.80	1.90			
sory Comm	S_e	.57	.60			
Climate)						
820	\bar{x}	5.02	5.38	19	-1.79	.83***
(Organiza-	SD	1.53	1.43			
tional Comm	S_e	.63	.59			
Climate)						
821	\bar{x}	5.89	6.19	18	-1.26	.52*
(Work Group	SD	.95	1.09			
Effective-	S_e	.66	.76			
ness)						
822	\bar{x}	6.05	6.04	17	.09	.96***
(Job	SD	.95	1.24			
Related	S_e	.19	.25			
Satisfaction)						
823	\bar{x}	5.60	5.96	15	-1.59	.76***
(Job	SD	1.32	1.27			
Related	S_e	.65	.63			
Training)						
824	\bar{x}	5.38	5.64	19	-1.51	.88***
(General	SD	1.52	1.47			
Organiza-	S_e	.53	.51			
tional Climate						

* $p < .05$
 ** $p < .01$
 *** $p < .001$

\bar{x} = Mean
 SD = Standard Deviation
 S_e = Standard Error of Measurement

Table 2
Cronbach's Alpha Coefficients and Supporting Data
for Each of the OAP Primary Factors (Study 1)

Factor	Test				Retest			
	N	alpha	rho	n	N	alpha	rho	n
800 (Skill Variety)	19	.67	.52	2	18	.82	.70	2
801 (Task Identity)	19	.82	.72	2	19	.40	.25	2
802 (Task Significance)	19	.92	.86	2	19	.90	.82	2
804 (Job Feedback)	19	.77	.62	2	19	.46	.30	2
805 (Work Support)	19	.66	.41	3	19	.73	.58	3
806 (Need for Enrichment)	19	.95	.81	5	19	.89	.65	5
810 (Job Per- formance Goals)	18	.35	.17	5	19	.77	.44	5
811 (Pride)	19	.79	.68	2	19	.98	.97	2
812 (Task Character- istics)	19	.86	.46	8	18	.86	.43	8
813 (Task Autonomy)	19	.88	.65	4	19	.87	.63	4

Factor	Test				Retest			
	N	alpha	rho	n	N	alpha	rho	n
814 (Work Repetition)	17	.72	.62	2	19	.71	.56	2
816 (Desired Repetitive Easy Tasks)	18	.49	.37	2	19	.63	.46	2
817 (Advance-ment/Recog-nition)	19	.87	.57	5	19	.90	.65	5
818 (Management Supervision)	18	.96	.75	8	18	.98	.87	8
819 (Supervi-sory Comm Climate)	19	.96	.75	8	19	.98	.86	8
820 (Organiza-tional Comm Climate)	19	.95	.69	9	19	.97	.80	9
821 (Work Group Effective-ness)	18	.89	.63	5	19	.91	.74	5
822 (Job Related Satisfaction)	19	.83	.42	7	17	.90	.57	7
823 (Job Related Training)	16	.91	.84	2	18	.93	.87	2
824 (General Organiza-tional Climate)	19	.96	.72	10	19	.97	.80	10

N = Number of subjects

n = Number of items

rho = Average item intercorrelation

additional criteria that a difference between alpha coefficients of more than plus or minus .10 could indicate problems, the same six factors were again identified. In addition, Factor 811 (Pride) also showed some inconsistency from test to retest.

As a further standard of comparison, Table 3 presents the coefficient alpha calculations for the entire pretest (data collection prior to consulting evaluation) data base. Results are consistent with Study 1, as Factor 801 (Task Identity), Factor 804 (Job Feedback) and Factor 805 (Work Support) were again below .70.

A comment should be made about the results of Cronbach's alpha analysis in Study 1. In all but one case where problems with low alpha coefficients were noted, the problems seemed related to a low number of items in a factor. In four of the six cases, factors in question had two items per factor. One other factor had three items. The only exception here was Factor 810. Further inspection of the alpha analysis, however, showed that one item was poorly correlated with the other items in the factor. Without this item, the alpha coefficient for Factor 810 was a respectable .77 on the test and .84 on the retest.

Table 3
Cronbach's Alpha Coefficients and Supporting Data
for Each of the OAP Primary Factors for the
Entire Pretest Data Base

Factor	N	alpha	rho	n
800 (Skill Variety)	55,539	.81	.68	2
801 (Task Identity)	55,276	.58	.41	2
802 (Task Significance)	55,897	.79	.65	2
804 (Job Feedback)	55,788	.66	.49	2
805 (Work Support)	54,103	.41	.20	3
806 (Need for Enrichment)	55,058	.90	.64	5
810 (Job Per- formance Goals	54,959	.72	.34	5
811 (Pride)	55,651	.90	.81	2
812 (Task Character- istics)	54,123	.84	.39	8
813 (Task Autonomy)	54,848	.85	.59	4

Factor	N	alpha	rho	n
814 (Work Repetition)	55,526	.70	.54	2
816 (Desired Repetitive Easy Tasks)	54,798	.70	.53	2
817 (Advance-ment/Recognition)	54,085	.78	.41	5
818 (Management Supervision)	54,060	.94	.67	8
819 (Supervi-sory Comm Climate)	53,450	.95	.68	8
820 (Organiza-tional Comm Climate)	54,613	.92	.57	9
821 (Work Group Effective-ness)	54,261	.87	.57	5
822 (Job Related Satisfaction)	49,374	.84	.42	7
823 (Job Related Training)	50,630	.73	.58	2
824 (General Organiza-tional Climate)	54,805	.92	.55	10

N = Number of subjects

n = Number of items

rho = Average item intercorrelation

Study 2

The results of the second study may be seen in Tables 4 and 5. As seen in Table 4, all but four of the retest coefficients were significant at $p < .001$ level or better. The exceptions were Factor 806 (Need for Enrichment), Factor 814 (Work Repetition), Factor 816 (Desired Repetitive Easy Tasks) and Factor 823 (Job Related Training). Factor 823 was significant precisely at the .001 level. Factor 802 (Task Significance) showed a significant decrease from test to retest. In addition to the correlation coefficients, Table 4 shows the means, standard deviations, and standard errors of measurement for both test and retest, the sample size for each factor and results of correlated means t-tests (DuBois, 1965).

As expected, the retest correlation coefficients were lower for Study 2 than for Study 1 (see Table 1). The lower coefficients also caused higher standard errors indicating a degree of measurement "wobble" over the six month interval. While these results were expected, effort will be made to strengthen factor stability and, therefore, lower standard errors of revised OAP factors. It should also be noted that the factors remaining most stable included measurements of total organizational climate and measurements dealing with the job itself. The least stable factors for the six month interval dealt with goals and with training.

Table 5 shows the results of the Cronbach's alpha analysis on the same data. The sample size, coefficient alpha, average interitem correlation and number of items per factor are reported for both test and retest conditions. Based on the criteria set forth in the methodology section, six factors showed a coefficient below .70 on either test or retest. These were Factor 801 (Task Identity), Factor 804 (Job Feedback), Factor 805 (Work Support),

Table 4

Pearson Product Moment Correlation Coefficients
and Supporting Data for Each of the OAP Primary Factors
on Study 2 Test-Retest Reliability Analysis (Six Month Interval)

Factor		Test	Retest	N	t	r
800	\bar{x}	3.33	3.29	380	.44	.44*
(Skill	SD	1.56	1.61			
Variety)	S_e	1.17	1.20			
801	\bar{x}	4.14	3.97	353	1.76	.33*
(Task	SD	1.50	1.55			
Identity)	S_e	1.23	1.27			
802	\bar{x}	4.95	4.62	391	3.39*	.34*
(Task	SD	1.65	1.72			
Significance)	S_e	1.34	1.40			
804	\bar{x}	3.90	3.73	379	1.74	.25*
(Job	SD	1.47	1.48			
Feedback)	S_e	1.27	1.28			
805	\bar{x}	4.33	4.10	359	3.09	.26*
(Work	SD	1.18	1.11			
Support)	S_e	1.02	.95			
806	\bar{x}	5.04	4.73	373	2.85	.14
(Need for	SD	1.53	1.68			
Enrichment)	S_e	1.42	1.56			
810	\bar{x}	4.34	4.17	363	2.31	.21*
(Job Per-	SD	1.05	1.10			
formance Goals)	S_e	.93	.98			
811	\bar{x}	4.04	3.71	382	3.27	.43*
(Pride)	SD	1.90	1.81			
	S_e	1.43	1.37			
812	\bar{x}	4.20	3.96	331	3.24	.43*
(Task	SD	1.22	1.32			
Character-	S_e	.92	.97			
istics)						

Factor		Test	Retest	N	t	r
813	\bar{x}	2.86	2.81	359	-.70	.56*
(Task	SD	1.43	1.41			
Autonomy)	S_e	.95	.94			
814	\bar{x}	5.53	5.44	388	1.02	.13
(Work	SD	1.34	1.48			
Repetition)	S_e	1.25	1.38			
816	\bar{x}	3.43	3.43	385	-.04	.16
(Desired	SD	1.57	1.53			
Repetitive	S_e	1.44	1.40			
Easy Tasks)						
817	\bar{x}	3.83	3.69	380	2.03	.39*
(Advance-	SD	1.19	1.21			
ment/Recog-	S_e	.93	.95			
nition)						
818	\bar{x}	4.82	4.72	362	.98	.20*
(Management	SD	1.56	1.61			
Supervision)	S_e	1.40	1.44			
819	\bar{x}	4.39	4.36	361	.29	.26*
(Supervi-	SD	1.61	1.60			
sory Comm	S_e	1.38	1.38			
Climate)						
820	\bar{x}	3.78	3.73	362	.68	.43*
(Organiza-	SD	1.35	1.44			
tional Comm	S_e	1.02	1.09			
Climate)						
821	\bar{x}	5.02	4.90	362	1.40	.30*
(Work Group	SD	1.34	1.49			
Effective-	S_e	1.12	1.25			
ness)						
822	\bar{x}	4.16	3.97	334	2.33	.43*
(Job	SD	1.41	1.42			
Related	S_e	1.06	1.07			
Satisfaction)						
823	\bar{x}	3.97	3.93	369	.44	.18+
(Job	SD	1.64	1.62			
Related	S_e	1.49	1.47			
Training)						
824	\bar{x}	3.83	3.67	356	1.87	.42*
(General	SD	1.47	1.47			
Organiza-	S_e	1.12	1.12			
tional Climate						

* $p < .001$
+ significant at
the .001 level,
but not beyond

\bar{x} = Mean
SD = Standard Deviation
 S_e = Standard Error of Measurement

Factor 810 (Job Performance Goals), Factor 814 (Work Repetition) and Factor 816 (Desired Repetitive Easy Tasks). Under the additional criteria that a difference between alpha coefficients of more than plus or minus .10 would indicate problems, two of these same five factors (801 and 814) again were indicated. These results may be compared with results from the entire pre-test data base by contrasting Tables 5 and 3.

As was the case in Study 1, problems with low alpha coefficients seemed related to low number of items in a factor. In four of the six cases, factors in question had two items per factor. One other factor had three items. Again, the only exception was Factor 810, a factor containing one item poorly correlated with the other items in the factor. Without this item, the alpha coefficient for Factor 810 was .79 on the test and .82 on the retest.

Table 5
Cronbach's Alpha Coefficients and Supporting Data
for Each of the OAP Primary Factors (Study 2)

Factor	Test				Retest			
	N	alpha	rho	n	N	alpha	rho	n
800 (Skill Variety)	389	.82	.70	2	388	.88	.78	2
801 (Task Identity)	367	.59	.41	2	383	.65	.48	2
802 (Task Significance)	394	.73	.58	2	395	.80	.66	2
804 (Job Feedback)	386	.69	.52	2	392	.75	.57	2
805 (Work Support)	375	.44	.21	3	380	.37	.18	3
806 (Need for Enrichment)	388	.91	.68	5	383	.93	.74	5
810 (Job Per- formance Goals)	376	.69	.30	5	385	.73	.35	5
811 (Pride)	390	.91	.84	2	391	.88	.79	2
812 (Task Character- istics)	353	.86	.45	8	372	.88	.49	8
813 (Task Autonomy)	377	.84	.58	4	380	.86	.61	4

Factor	Test				Retest			
	N	alpha	rho	n	N	alpha	rho	n
814 (Work Repetition)	393	.64	.47	2	394	.80	.66	2
816 (Desired Repetitive Easy Tasks)	387	.68	.51	2	397	.66	.49	2
817 (Advance-ment/Recog-nition)	389	.79	.43	5	390	.81	.47	5
818 (Management Supervision)	374	.95	.69	8	387	.95	.70	8
819 (Supervi-sory Comm Climate)	375	.94	.68	8	382	.95	.72	8
820 (Organiza-tional Comm Climate)	380	.91	.55	9	379	.93	.62	9
821 (Work Group Effective-ness)	375	.84	.52	5	384	.88	.60	5
822 (Job Related Satisfaction)	359	.86	.46	7	374	.87	.48	7
823 (Job Related Training)	378	.74	.59	2	388	.77	.63	2
824 (General Organiza-tional Climate)	377	.92	.53	10	377	.93	.58	10

N = Number of subjects

n = Number of items

rho = Average item intercorrelation

Discussion, Conclusions, and Recommendations

Discussion

Perhaps the simplest way to integrate and discuss results is to consider each factor that had a reliability coefficient below the minimum acceptable range. In so doing, the following code will be used to refer specific parts of the report:

TR₁ - Test-Retest (Study 1, Table 1)

A₁ - Cronbach's alpha (Study 1, Table 2)

A_{db} - Cronbach's alpha on the entire pretest data base
(Study 1, Table 3)

TR₂ - Test-Retest (Study 2, Table 4)

A₂ - Cronbach's alpha (Study 2, Table 5)

Factor 800, Skill Variety (A₁): This factor had an alpha of less than .67 for the first (test) administration in Study 1, but the coefficient for the retest was exactly .70. All other studies showed coefficients in the acceptable range. This is a two item factor.

Factor 801, Task Identity (A₁, A_{db}, A₂): This factor remained reasonably consistent on the test-retest coefficients, but showed a great deal of variation on the alpha coefficients, with some results being quite low. The A_{db} value was .58 which seems a middle ground for coefficients ranging from .40 to .82. This is a two item factor.

Factor 804, Job Feedback (TR₁, A₁, A_{db}, A₂): This factor was below the acceptable level on both parts of Study 1 and on calculations from the data base. In Study 2, the test-retest was an acceptable .25, but alpha levels were low to marginal (.69 and .73). This is a two item factor.

Factor 805, Work Support (A₁, A_{db}, A₂): This factor was below acceptable levels on all Cronbach's alpha calculations, with very low coefficients in Study 2 (.44 and .37). Test-retest coefficients were acceptable in terms of statistical significance. This is a three item factor.

Factor 806, Need for Enrichment (TR₂): This factor was acceptable on the test-retest part of Study 1, but showed a very poor correlation in Study 2 (.14). Despite this, however, all alpha coefficients were quite high, varying from .89 to .95 on Studies 1 and 2 and .90 for the data base. A comment will be made about this factor below. This is a five item factor.

Factor 810, Job Performance Goals (TR₁, A₁, A₂): This factor showed considerable variability. Especially noteworthy were alpha coefficients ranging from .35 to .77. Despite this, however, the alpha coefficient for the entire data base was acceptable (.72), suggesting that extremely large sample size may mask some of the lack of stability and internal consistency of this factor. Nevertheless, interitem correlations must be improved. In particular, one item must be revised or removed. This is a five item factor.

Factor 811, Pride (A₁): This factor showed a shift in value of alpha coefficients from .79 to .98 on Study 1. Despite the shift, all coefficients were good to excellent, with the entire data base alpha being .90. It seems likely this variation was sample specific, but results do reinforce the high probability of variability in factors with few items. This is a two item factor.

Factor 814, Work Repetition (TR₂, A₂): This factor was barely within the minimum acceptable standards on Cronbach's alpha for Study 1 (.72 and .71) and for the data base (.70). On Study 2, however, the factor showed a distinct lack of test-retest stability (.13) while dropping slightly on the coefficient alpha (.64 and .80). Results again point out the instability of a two item factor.

Factor 816, Desired Repetitive Easy Tasks (A₁, TR₂, A₂): Results for this factor are almost a mirror image of Factor 814. Test-retest stability for Study 1 was acceptable (.72); alpha coefficients were low (.49 and .63) on Study 1 and barely acceptable (.70) for the data base. For the longer interval, however, stability dropped sharply (.16) while alpha coefficients remained below standard (.68 and .66). This is a two item factor.

Factor 821, Work Group Effectiveness (TR₁): This factor had comparatively low stability on Study 1. Alpha coefficients were good throughout, however, ranging from .86 to .91. The stability coefficient for the six month interval was acceptable and in line with other factors. This factor

is likely unique in one respect: respondents seem more likely to give positive responses to this factor than any other. This tendency to "fake good" (sometimes called social desirability) may well be the cause of sample specific variations in the factor, or, for that matter, any of the factors. Bias in the form of "making myself look good," therefore, is an issue that needs investigation for all OAP items and factors.

Factor 823, Job Related Training (TR₂): Test-retest stability was good (.76), and alpha coefficients were quite high (.91 and .93) for this factor on Study 1. The alpha coefficient for the entire data base dropped, however, to .73, a figure barely in the acceptable range. This pattern continued in the alpha coefficients for Study 2 (.74 and .77), but the test-retest coefficient on Study 2 dropped sharply (.18). This appears to be mainly the result of so few items in the factor. Factor 823 is a two item factor.

Two Final Comments. First, a comment about the findings regarding Factor 806 is in order. It will be recalled this factor showed problems only with long-range stability, not with short-range stability or internal consistency. It seems highly likely that this factor taps perceptions of issues which are likely to change over time. This change in people and conditions should not be confused with measurement error. Nunnally and

Durham (1975) point out that if retests "...given six months apart correlate less than those given two weeks apart, in a sense the difference is not because of 'error,' but because of systematic changes in people" (p.336). It appears quite possible this is the case for the factor in question.

Second, in contrasting the two methods of assessing reliability, Cronbach's alpha is generally held in higher regard than the test-retest method (see, for example, Carmines and Zeller, 1979). Nevertheless, stability and dependability of factor scores over time is an important issue, especially in terms of evaluation of consulting effectiveness. While alpha coefficients should probably be considered more important, final interpretations and judgements should be based on careful weighing of both stability and internal consistency estimates of OAP reliability.

Conclusions and Recommendations

Looking at the results in retrospect, it is possible to say first that the OAP generally shows acceptable to excellent reliability. Factor differences have been noted, and, clearly, some factors are stronger than others. Nevertheless, the instrument seems quite reliable enough to provide a source of real time Air Force systemic data. In terms of its use as a consulting tool, results must be considered on a factor to factor basis, especially as the results may impact consulting evaluation methodology.

Second, even for factors that show weaknesses in reliability, remedial actions seem fairly obvious. It is clear, for example, that most of the instability and low internal consistency can be attributed to factors with few items. This is not surprising, since both types of reliability can be increased by adding items to a scale or factor. Not just any items will do,

however, as the experience with factor 810 shows. One item with low inter-item correlations can severely damage overall factor reliability, whether stability or internal consistency. It seems important, then, to center revision efforts on attempts to combine an optimum number of six to eight highly intercorrelated items into fewer, more precise factors. In particular, the current two or three item factors should be expanded or combined into more efficient and effective measures.

Third, the issue of positive response bias as related to the OAP should be studied. The possible existence of this problem was pointed out in relation to Factor 821. The likelihood is, however, that this is a form of bias in all factors. In a situation where outside "experts" are looking at an organization, the tendency to make supervisor and organization look good can be very strong. Demonstrating that results are not unduly influenced by such tendencies has important implications for both reliability and validity of the OAP. Fortunately, the issue is not a complex one to deal with, and at least three options are available for such a study (Crowne & Marlowe, 1960; Greenwald and Gellow, 1980; Schuessler, Broome, & Cardascia, 1978).

Fourth, consideration of reliability studies should be included when selecting a factor analysis model for the OAP revision. Conlon (1980) has demonstrated what may be a more parsimonious OAP factor structure. Whether or not these are the final revised factors, however, the model of factor analysis is an important consideration. Coefficient theta, for example, is based on the model of principle components, while coefficient omega is based on the common factor analysis model (Carmines and Zeller, 1979). Both have advantages, disadvantages and different uses. Thus, the model of factor analysis used for any revision may play a part in not only the extent to which factor reliability is possible, but also on how reliability is determined and measured.

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Appendix A

The Organizational Assessment Package

PRIVACY ACT STATEMENT

In accordance with paragraph 30, AFR 12-35, The Air Force Privacy Act Program, the following information about this survey is provided:

- a. Authority: 10 U.S.C., 8012, Secretary of the Air Force: Powers and Duties, Delegation by Compensation E. O. 9397, 22 Nov 43, Numbering System for Federal Accounts Relating to Individual Persons.
- b. Principal Purpose: The survey is being conducted to assess your organization from a leadership and management perspective.
- c. Routine Uses: Information provided by respondents will be treated confidentially. The averaged data will be used for organizational strength and weakness identification and Air Force wide research and development purposes.
- d. Participation: Response to this survey is voluntary. Your cooperation in this effort is appreciated.

[PLEASE DO NOT TEAR, MARK ON, OR OTHERWISE DAMAGE THIS BOOKLET]

EXPIRATION DATE: 31 Oct 1981

SCN 81-14

GENERAL INFORMATION

The leaders of your organization are genuinely interested in improving the overall conditions within their areas of responsibility. Providing a more satisfying Air Force way of life and increasing organizational effectiveness are also goals. One method of reaching these goals is by continual refinement of the management processes of the Air Force. Areas of concern include job related issues such as leadership and management; training and utilization; motivation of and concern for people; and the communication process.

This survey is intended to provide a means of identifying areas within your organization needing the greatest emphasis in the immediate future. You will be asked questions about your job, work group, supervisor, and organization. For the results to be useful, it is important that you respond to each statement thoughtfully, honestly, and as frankly as possible. Remember, this is not a test, there are no right or wrong responses.

Your completed response sheet will be processed by automated equipment, and be summarized in statistical form. Your individual response will remain confidential, as it will be combined with the responses of many other persons, and used for organizational feedback and possibly Air Force wide studies.

KEY WORDS

The following should be considered as key words throughout the survey:

- Supervisor: The person to whom you report directly.
- Work Group: All persons who report to the same supervisor that you do.
- Organization: Your squadron. However, if you work in staff/support agencies, the division or directorate would be your organization.

INSTRUCTIONS

1. All statements may be answered by filling in the appropriate spaces on the response sheet provided. If you do not find a response that fits your case exactly, use the one that is the closest to the way you feel.
2. Be sure that you have completed Section 1 of the response sheet, as instructed by the survey administrator, before beginning Section 2.
3. Please use the pencil provided, and observe the following:
 - Make heavy black marks that fill the spaces.
 - Erase cleanly any responses you wish to change.
 - Make no stray markings of any kind on the response sheet.
 - Do not staple, fold or tear the response sheet.
 - Do not make any markings on the survey booklet.
4. The response sheet has a 0-7 scale. The survey statements normally require a 1-7 response. Use the zero (0) response only if the statement truly does not apply to your situation. Statements are responded to by marking the appropriate space on the response sheet as in the following example:

Using the scale below, evaluate the sample statement.

1 = Strongly disagree	5 = Slightly agree
2 = Moderately disagree	6 = Moderately agree
3 = Slightly disagree	7 = Strongly agree
4 = Neither agree nor disagree	

Sample Statement. The information your work group receives from other work groups is helpful.

If you moderately agree with the sample statement, you would blacken the oval (6) on the response sheet.

Sample Response: NA
 (0) (1) (2) (3) (4) (5) (6) (7)

5. When you have completed the survey, please turn in the survey materials as instructed in the introduction.

BACKGROUND INFORMATION

This section of the survey contains your background. The information requested is to insure that the group you belong to are accurately represented and not to identify you as an individual. Please use the separate response sheet and darker the oval which corresponds to your response to each question.

1. Total years in the Air Force:

1. Less than 1 year.
2. More than 1 year, less than 2 years.
3. More than 2 years, less than 3 years.
4. More than 3 years, less than 4 years.
5. More than 4 years, less than 8 years.
6. More than 8 years, less than 12 years.
7. More than 12 years.

2. Total months in present career field:

1. Less than 1 month.
2. More than 1 month, less than 6 months.
3. More than 6 months, less than 12 months.
4. More than 12 months, less than 18 months.
5. More than 18 months, less than 24 months.
6. More than 24 months, less than 36 months.
7. More than 36 months.

3. Total months in this position:

1. Less than 1 month.
2. More than 1 month, less than 6 months.
3. More than 6 months, less than 12 months.
4. More than 12 months, less than 18 months.
5. More than 18 months, less than 24 months.
6. More than 24 months, less than 36 months.
7. More than 36 months.

4. Total months in present position:

1. Less than 1 month.
2. More than 1 month, less than 6 months.
3. More than 6 months, less than 12 months.
4. More than 12 months, less than 18 months.
5. More than 18 months, less than 24 months.
6. More than 24 months, less than 36 months.
7. More than 36 months.

5. Your Ethnic Group is:

1. American Indian or Alaskan Native
2. Asian or Pacific Islander
3. Black, not of Hispanic Origin
4. Hispanic
5. White, not of Hispanic Origin
6. Other

6. Your highest education level obtained is:

1. Non-high school graduate
2. High school graduate or GED
3. Less than two years college
4. Two years or more college
5. Bachelors Degree
6. Masters Degree
7. Doctoral Degree

7. Highest level of professional military education (residence or correspondence):

0. None or not applicable
1. NCO Orientation Course or USAF Supervisor Course (NCO Phase 1 or 2)
2. NCO Leadership School (NCO Phase 3)
3. NCO Academy (NCO Phase 4)
4. Senior NCO Academy (NCO Phase 5)
5. Squadron Officer School
6. Intermediate Service School (i.e., ACSC, AFSC)
7. Senior Service School (i.e., AWC, ICAF, NWC)

8. How many people do you directly supervise?

- | | |
|---------|--------------|
| 1. None | 5. 4 to 5 |
| 2. 1 | 6. 6 to 8 |
| 3. 2 | 7. 9 or more |
| 4. 3 | |

9. For how many people do you write performance reports?

- | | |
|---------|--------------|
| 1. None | 5. 4 to 5 |
| 2. 1 | 6. 6 to 8 |
| 3. 2 | 7. 9 or more |
| 4. 3 | |

10. Does your supervisor actually write your performance reports?

- | | | |
|--------|-------|-------------|
| 1. yes | 2. no | 3. not sure |
|--------|-------|-------------|

11. Which of the following best describes your marital status?

0. Not Married
1. Married: Spouse is a civilian employed outside home.
2. Married: Spouse is a civilian employed outside home-geographically separated.
3. Married: Spouse not employed outside home.
4. Married: Spouse not employed outside home-geographically separated.
5. Married: Spouse is a military member.
6. Married: Spouse is a military member-geographically separated.
7. Single Parent.

12. What is your usual work schedule?

1. Day shift, normally stable hours.
2. Swing shift (about 1600-2400)
3. Mid shift (about 2400-0800)
4. Rotating shift schedule
5. Day or shift work with irregular/unstable hours.
6. Frequent TDY/travel or frequently on-call to report to work.
7. Crew schedule.

13. How often does your supervisor hold group meetings?

- | | |
|-----------------|-----------------|
| 1. Never | 4. Weekly |
| 2. Occasionally | 5. Daily |
| 3. Monthly | 6. Continuously |

14. How often are group meetings used to solve problems and establish goals?

- | | |
|-----------------|------------------------|
| 1. Never | 3. About half the time |
| 2. Occasionally | 4. All of the time |

15. What is your aeronautical rating and current status?

- | | |
|-----------------------------|----------------------------------|
| 1. Nonrated, not on aircrew | 3. Rated, on crew/operations job |
| 2. Nonrated, not on aircrew | 4. Rated, in support job |

16. Which of the following best describes your career or employment intentions?

1. Planning to retire in the next 12 months
2. Will continue in/with the Air Force as a career
3. Will most likely continue in/with the Air Force as a career
4. May continue in/with the Air Force
5. Will most likely not make the Air Force a career
6. Will separate/terminate from the Air Force as soon as possible

JOB INVENTORY

Below are items which relate to your job. Read each statement carefully and then decide to what extent the statement is true of your job. Indicate the extent to which the statement is true for your job by choosing the phrase which best represents your job.

- | | |
|-----------------------------|------------------------------|
| 1 = Not at all | 5 = To a fairly large extent |
| 2 = To a very little extent | 6 = To a great extent |
| 3 = To a little extent | 7 = To a very great extent |
| 4 = To a moderate extent | |

Select the corresponding number for each question and enter it on the separate response sheet.

17. To what extent does your job require you to do many different things, using a variety of your talents and skills?
18. To what extent does your job involve doing a whole task or unit of work?
19. To what extent is your job significant, in that it affects others in some important way?
20. To what extent does your job provide a great deal of freedom and independence in scheduling your work?
21. To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?
22. To what extent are you able to determine how well you are doing your job without feedback from anyone else?
23. To what extent do additional duties interfere with the performance of your primary job?
24. To what extent do you have adequate tools and equipment to accomplish your job?
25. To what extent is the amount of work space provided adequate?
26. To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?
27. To what extent does doing your job well affect a lot of people?
28. To what extent does your job provide you with the chance to finish completely the piece of work you have begun?

1 = Not at all
2 = To a very little extent
3 = To a little extent
4 = To a moderate extent

5 = To a fairly large extent
6 = To a great extent
7 = To a very great extent

29. To what extent does your job require you to use a number of complex skills?
30. To what extent does your job give you freedom to do your work as you see fit?
31. To what extent are you allowed to make the major decisions required to perform your job well?
32. To what extent are you proud of your job?
33. To what extent do you feel accountable to your supervisor in accomplishing your job?
34. To what extent do you know exactly what is expected of you in performing your job?
35. To what extent are your job performance goals difficult to accomplish?
36. To what extent are your job performance goals clear?
37. To what extent are your job performance goals specific?
38. To what extent are your job performance goals realistic?
39. To what extent do you perform the same tasks repeatedly within a short period of time?
40. To what extent are you faced with the same type of problem on a weekly basis?
41. To what extent are you aware of promotion/advancement opportunities that affect you?
42. To what extent do co-workers in your work group maintain high standards of performance?
43. To what extent do you have the opportunity to progress up your career ladder?
44. To what extent are you being prepared to accept increased responsibility?
45. To what extent do people who perform well receive recognition?
46. To what extent does your work give you a feeling of pride?

1 = Not at all
2 = To a very little extent
3 = To a little extent
4 = To a moderate extent

5 = To a fairly large extent
6 = To a great extent
7 = To a very great extent

- 47. To what extent do you have the opportunity to learn skills which will improve your promotion potential?
- 48. To what extent do you have the necessary supplies to accomplish your job?
- 49. To what extent do details (tasks not covered by primary or additional duty descriptions) interfere with the performance of your primary job?
- 50. To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?

JOB DESIRES

The statements below deal with job related characteristics. Read each statement and choose the response which best represents how much you would like to have each characteristic in your job.

In my job, I would like to have the characteristics described:

1 = not at all
2 = A slight amount
3 = A moderate amount
4 = A fairly large amount

5 = A large amount
6 = A very large amount
7 = An extremely large amount

- 51. Opportunities to have independence in my work.
- 52. A job that is meaningful.
- 53. An opportunity for personal growth in my job.
- 54. Opportunities in my work to use my skills.
- 55. Opportunities to perform a variety of tasks.
- 56. A job in which tasks are repetitive.
- 57. A job in which tasks are relatively easy to accomplish.

SUPERVISION

The statements below describe characteristics of managers or supervisors. Indicate your agreement by choosing the phrase which best represents your attitude concerning your supervisor.

- | | |
|--------------------------------|----------------------|
| 1 = Strongly disagree | 5 = Slightly agree |
| 2 = Moderately disagree | 6 = Moderately agree |
| 3 = Slightly disagree | 7 = Strongly agree |
| 4 = Neither agree nor disagree | |

Select the corresponding number for each statement and enter it on the separate response sheet.

58. My supervisor is a good planner.
59. My supervisor sets high performance standards.
60. My supervisor encourages teamwork.
61. My supervisor represents the group at all times.
62. My supervisor establishes good work procedures.
63. My supervisor has made his responsibilities clear to the group.
64. My supervisor fully explains procedures to each group member.
65. My supervisor performs well under pressure.
66. My supervisor takes time to help me when needed.
67. My supervisor asks members for their ideas on task improvements.
68. My supervisor explains how my job contributes to the overall mission.
69. My supervisor helps me set specific goals.
70. My supervisor lets me know when I am doing a good job.
71. My supervisor lets me know when I am doing a poor job.
72. My supervisor always helps me improve my performance.
73. My supervisor insures that I get job related training when needed.
74. My job performance has improved due to feedback received from my supervisor.

75. When I need technical advice, I usually go to my supervisor.
76. My supervisor frequently gives me feedback on how well I am doing my job.

WORK GROUP PRODUCTIVITY

The statements below deal with the output of your work group. The term "your work group" refers to you and your co-workers who work for the same supervisor. Indicate your agreement with the statement by selecting the phrase which best expresses your opinion.

- | | |
|-------------------------|--------------------------------|
| 1 = Strongly disagree | 4 = Neither agree nor disagree |
| 2 = Moderately disagree | 5 = Slightly agree |
| 3 = Slightly disagree | 6 = Moderately agree |
| | 7 = Strongly agree |

Select the corresponding number for each statement and enter it on the separate response sheet.

77. The quantity of output of your work group is very high.
78. The quality of output of your work group is very high.
79. When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations.
80. Your work group always gets maximum output from available resources (e.g., personnel and material).
81. Your work group's performance in comparison to similar work groups is very high.

ORGANIZATION CLIMATE

Below are items which describe characteristics of your organization. The term "your organization" refers to your squadron or staff agency. Indicate your agreement by choosing the phrase which best represents your opinion concerning your organization.

- | | |
|--------------------------------|----------------------|
| 1 = Strongly disagree | 5 = Slightly agree |
| 2 = Moderately disagree | 6 = Moderately agree |
| 3 = Slightly disagree | 7 = Strongly agree |
| 4 = Neither agree nor disagree | |

Select the corresponding number for each item and enter it on the separate response sheet.

1 = Strongly disagree
2 = Moderately disagree
3 = Slightly disagree
4 = Neither agree or disagree

5 = Slightly agree
6 = Moderately agree
7 = Strongly agree

- 82. Ideas developed by my work group are readily accepted by management personnel above my supervisor.
- 83. My organization provides all the necessary information for me to do my job effectively.
- 84. My organization provides adequate information to my work group.
- 85. My work group is usually aware of important events and situations.
- 86. My complaints are aired satisfactorily.
- 87. My organization is very interested in the attitudes of the group members toward their jobs.
- 88. My organization has a very strong interest in the welfare of its people.
- 89. I am very proud to work for this organization.
- 90. I feel responsible to my organization in accomplishing its mission.
- 91. The information in my organization is widely shared so that those needing it have it available.
- 92. Personnel in my unit are recognized for outstanding performance.
- 93. I am usually given the opportunity to show or demonstrate my work to others.
- 94. There is a high spirit of teamwork among my co-workers.
- 95. There is outstanding cooperation between work groups of my organization.
- 96. My organization has clear-cut goals.
- 97. I feel motivated to contribute my best efforts to the mission of my organization.
- 98. My organization rewards individuals based on performance.
- 99. The goals of my organization are reasonable.
- 100. My organization provides accurate information to my work group.

JOB RELATED ISSUES

The items below are used to determine how satisfied you are with specific job related issues. Indicate your degree of satisfaction or dissatisfaction with each issue by choosing the most appropriate phrase.

- | | |
|----------------------------------------|--------------------------|
| 1 = Extremely dissatisfied | 5 = Slightly satisfied |
| 2 = Moderately dissatisfied | 6 = Moderately satisfied |
| 3 = Slightly dissatisfied | 7 = Extremely satisfied |
| 4 = Neither satisfied nor dissatisfied | |

Select the corresponding number for each question and enter it on the separate response sheet.

101. Feeling of Helpfulness
The chance to help people and improve their welfare through the performance of my job. The importance of my job performance to the welfare of others.
102. Co-Worker Relationship
My amount of effort compared to the effort of my co-workers, the extent to which my co-workers share the load, and the spirit of teamwork which exists among my co-workers.
103. Family Attitude Toward Job
The recognition and the pride my family has in the work I do.
104. On-the-Job Training (OJT)
The OJT instructional methods and instructors' competence.
105. Technical Training (Other than OJT)
The technical training I have received to perform my current job.
106. Work Schedule
My work schedule; flexibility and regularity of my work schedule; the number of hours I work per week.
107. Job Security
108. Acquired Valuable Skills
The chance to acquire valuable skills in my job which prepare me for future opportunities.
109. My Job as a Whole

Appendix B

OAP Standard Response Sheet

NA	NA	NA	NA
1	31	61	91
2	32	62	92
3	33	63	93
4	34	64	94
5	35	65	95
6	36	66	96
7	37	67	97
8	38	68	98
9	39	69	99
10	40	70	100
11	41	71	101
12	42	72	102
13	43	73	103
14	44	74	104
15	45	75	105
16	46	76	106
17	47	77	107
18	48	78	108
19	49	79	109
20	50	80	110
21	51	81	111
22	52	82	112
23	53	83	113
24	54	84	114
25	55		115
26	56		116
27	57		117
28	58		118
29	59		119
30	60		120

Appendix C

OAP Survey Administration Script

CODE AND WRITE IT IN THE SPACE PROVIDED ON THE COMMANDER'S QUESTIONNAIRE.
(PAUSE) THIS SURVEY SHOULD TAKE ABOUT FIVE MINUTES. READ THE INSTRUCTIONS
AND BEGIN. (WAIT FIVE MINUTES) IF YOU HAVE NOT COMPLETED THE COMMANDER'S
QUESTIONNAIRE, PLEASE PUT IT ASIDE WHILE I GIVE INSTRUCTIONS FOR THE SECOND
SURVEY. (GO TO PART II OF THIS SCRIPT)

B. THE ORGANIZATIONAL ASSESSMENT PACKAGE SURVEY THAT YOU WILL BE TAKING
CONSISTS OF 109 STATEMENTS DEVELOPED FOR COMPUTER PROCESSING AND WHICH SAMPLE
CERTAIN CONCERNS THROUGHOUT THE AIR FORCE. PLEASE DO NOT START UNTIL WE GIVE
FURTHER INSTRUCTIONS. (PASS OUT SURVEY BOOKLETS AND RESPONSE SHEETS.)

SLIDE #3: EACH OF YOU SHOULD HAVE AN APPOINTMENT SLIP SUCH AS THE ONE SHOWN
ON THE SLIDE. AT THIS TIME TAKE OUT YOUR APPOINTMENT SLIPS. (PAUSE AND SLIDE
#4).

II. OAP RESPONSE SHEET INSTRUCTIONS:

NEXT, TAKE YOUR COMPUTER ANSWER SHEET, TURN IT SIDEWAYS, AND LOCATE SECTION ONE
AT THE TOP RIGHT CORNER OF THE SHEET. THIS BACKGROUND INFORMATION IS NECESSARY
FOR US TO LOOK AT AIR FORCE WIDE-ISSUES AND NOT TO IDENTIFY INDIVIDUALS. FOR
EXAMPLE, IF WE WANT TO KNOW WHAT AFSCs OR CERTAIN OTHER GROUPS THINK ABOUT A
PARTICULAR SUBJECT, THEN WE CAN EXTRACT THAT DATA FROM THE COMPUTER ANALYSIS.
WE WILL COMPLETE SECTION ONE TOGETHER, SO PLEASE WAIT FOR MY INSTRUCTIONS.
REFER TO YOUR APPOINTMENT SLIP. LOCATE THE 10-CHARACTER, ALPHA-NUMERIC SURVEY
CODE. WRITE THESE LETTERS AND NUMBERS FORM LEFT TO RIGHT IN THE 10 SQUARES
LABELED "SUPERVISOR'S CODE" AND "WORK GROUP CODE" ACROSS THE TOPS OF THE BLOCKS.
(REFER TO SLIDE)

THERE SHOULD NOT BE ANY ZEROES IN YOUR 10-CHARACTER CODE. ALSO, THE FIRST FIVE
CHARACTERS OF NON-SUPERVISORS' CODES SHOULD BE ALL "Zs". PLEASE INSURE WHEN YOU
PRINT YOUR Zs THAT THEY DO NOT LOOK LIKE THE NUMBER "TWO". AFTER PRINTING IN
THE 10-CHARACTER CODE, DARKEN THE OVALS IMMEDIATELY BELOW THE SQUARES THAT
CORRESPOND TO YOUR SURVEY CODE. (PAUSE).

UNDER "SEX" PRINT THE LETTER "M" OR "F" IN THE SQUARE AND BALCKEN THE "M" OVAL
FOR MALE, OR THE "F" FOR FEMALE. (PAUSE).

SURVEY ADMINISTRATION SCRIPT

SLIDE # 1: WELCOME

PASS OUT #2 PENCILS AND CHECK FOR APPOINTMENT SLIPS AS PEOPLE ENTER.

I. INTRODUCTION: GOOD MORNING/AFTERNOON. I AM _____ FROM THE LEADERSHIP AND MANAGEMENT DEVELOPMENT CENTER, MAXWELL AFB, ALA. WE WORK DIFFERENTLY FROM MOST TEAMS THAT COME TO YOUR ORGANIZATION. WE VISIT AN ORGANIZATION BY INVITATION ONLY AND, IN THIS CASE, WE ARE HERE AT THE PERSONAL INVITATION OF YOUR COMMANDER, _____.

SLIDE #2. ALSO WE DO NOT REPORT THE RESULTS OF OUR WORK BEYOND YOUR COMMANDER; WHAT WE IDENTIFY HERE WE LEAVE HERE. YOU ARE TAKING A SURVEY THIS MORNING/ AFTERNOON SO THAT YOUR OPINIONS MAY BE SHARED WITH THE ORGANIZATION LEADERS; HOWEVER, YOU REMAIN ANONYMOUS. NO ONE BUT PEOPLE FROM THE LEADERSHIP AND MANAGEMENT DEVELOPMENT CENTER WILL SEE YOUR RESPONSE SHEETS. WE WILL RETURN IN _____ AT WHICH TIME SURVEY RESULTS WILL BE FED BACK TO YOU. SINCE YOU WILL BE MAKING A VALUABLE CONTRIBUTION, IT IS EXTREMELY IMPORTANT THAT YOU BE VERY CAREFUL IN COMPLETING YOUR RESPONSE SHEET. BE SURE YOU MAKE ONLY ONE RESPONSE TO EACH STATEMENT AND DO NOT LEAVE ANY STRAY PENCIL MARKS ON THE RESPONSE SHEET.

(SELECT EITHER "A" OR "B")

A. YOU WILL COMPLETE TWO SURVEYS. THE FIRST SURVEY IS A COMMANDER'S QUESTIONNAIRE; IT CONTAINS _____ QUESTIONS THAT ALLOW YOU TO EXPRESS YOUR FEELINGS ON PARTICULAR ISSUES OF INTEREST TO YOUR COMMANDER. THE SECOND SURVEY IS THE ORGANIZATIONAL ASSESSMENT PACKAGE SURVEY; IT CONTAINS 109 STATEMENTS DEVELOPED FOR COMPUTER PROCESSING AND WHICH SAMPLE CERTAIN CONCERNS THROUGHOUT THE AIR FORCE. PLEASE DO NOT START EITHER SURVEY UNTIL WE GIVE INSTRUCTIONS. (PASS OUT COMMANDER'S QUESTIONNAIRE, OAP SURVEY BOOKLET, AND RESPONSE SHEETS)

SLIDE #3. WE WILL BEGIN WITH THE COMMANDER'S QUESTIONNAIRE. REFER TO YOUR APPOINTMENT SLIP AS SHOWN ON THE SCREEN. FIND YOUR 10-CHARACTER SURVEY

IN THE "YOUR AGE" BLOCK, WRITE YOUR AGE IN THE SQUARES AND BLACKEN THE CORRESPONDING OVALS. (PAUSE).

IN THE BLOCK TITLED "YOU ARE," DARKEN THE OVAL TO THE RIGHT OF THE WORD THAT MOST CORRECTLY IDENTIFIES YOUR STATUS. FOR EXAMPLE, OFFICER, ENLISTED, WG OR WS. (PAUSE)

COMPLETE THE "YOUR PAY GRADE" BLOCK BY WRITING YOUR PAY GRADE IN THE SQUARES AND BLACKEN THE OVALS THAT CORRESPOND TO YOUR PAY GRADE. FOR EXAMPLE, "ZERO FOUR" FOR PAY GRADE GS-4, WG-4, O-4, OR E-4. (PAUSE)

SLIDE #5: AFSC BLOCKS

PLEASE REVIEW THE SLIDE BEFORE WE COMPLETE THE AFSC BLOCKS AND NOTE THE INSTRUCTION. (PAUSE) IN THE "PRIMARY" AND "DUTY" BLOCKS, WRITE YOUR AFSCs IN THE SQUARES AND DARKEN THE CORRESPONDING OVALS TO INCLUDE ANY PREFIX AND/OR SUFFIX. LEAVE THE FIRST BLOCK BLANK IF IT DOES NOT CONTAIN A SUFFIX. IF YOU HAVE A FOUR-DIGIT AFSC. ENTER A "ZERO" IN THE FIRST NUMERIC POSITION AND DARKEN THE CORRESPONDING OVAL. THIS COMPLETES THE BACKGROUND INFORMATION.

III. OAP CONTENTS: OPEN THE COVER PAGE OF THE SURVEY BOOKLET AND NOTE THE STANDARD PRIVACY ACT STATEMENT. (PAUSE) THE NEXT TWO PAGES CONTAIN GENERAL INFORMATION AND INSTRUCTIONS. NOTE THE KEY DEFINITIONS FOR SUPERVISOR, WORK GROUP, AND ORGANIZATION.

SLIDE #6: DEFINITIONS. (READ EACH DEFINITION AND POINT OUT THAT THE DEFINITIONS SLIDE WILL REMAIN ON THE SCREEN WHILE THE PEOPLE ARE TAKING THE SURVEY)

SUPERVISOR--THE PERSON TO WHOM YOU REPORT DIRECTLY.

WORK GROUP--ALL PERSONS WHO REPORT TO THE SAME SUPERVISOR AS YOU.

ORGANIZATION--YOUR SQUADRON. HOWEVER, FOR THOSE INDIVIDUALS WHO WORK STAFF OR SUPPORT AGENCIES, THE DIVISION OR DIRECTORATE WOULD BE THE ORGANIZATION.

SLIDE #7: RESPONSE SHEET EXAMPLE

REVIEW THE SAMPLE STATEMENT ON PAGE iii. (PAUSE WHILE THEY REVIEW) IF YOU MODERATELY AGREE WITH THE SAMPLE STATEMENT, YOU WOULD HAVE DARKENED OVAL "6" ON THE ANSWER SHEET. IF THE STATEMENT DID NOT APPLY TO YOUR WORK GROUP, YOU WOULD HAVE DARKENED THE "ZERO" OVAL AS SHOWN ON THE SCREEN. ARE THERE ANY QUESTIONS?

BE SURE TO GIVE ONLY ONE RESPONSE TO EACH STATEMENT AND DO NOT LEAVE STRAY MARKS ON THE RESPONSE SHEET. (IF AN ADDITIONAL COMMENT SHEET HAS BEEN PROVIDED, POINT THIS OUT TO THEM.)

REMEMBER, THIS IS NOT A TEST--THERE ARE NO RIGHT OR WRONG ANSWERS. YOUR RESPONSES WILL MERELY EXPRESS YOUR OPINIONS. IF YOU HAVE ANY QUESTIONS DURING THE SURVEY, PLEASE RAISE YOUR HAND AND WE WILL HELP YOU. WHEN YOU COMPLETE THE SURVEY, YOU MAY LEAVE. AS YOU DEPART, PLEASE DO SO QUIETLY AND PLACE YOUR SURVEY MATERIAL AND APPOINTMENT SLIPS IN THE APPROPRIATE BOXES NEAR THE EXITS. THANK YOU FOR YOUR PARTICIPATION. IF THERE ARE NO QUESTIONS AT THIS TIME, PLEASE BEGIN.

(PLACE SLIDE #6 ON THE SCREEN AND LEAVE THERE DURING THE SURVEY)

Appendix D

Graphic Showing Changes in Instructions for
Completing Demographic Items in Study 1

SUPERVISOR WORK GROUP CODE			

LEAVE BLANK

WORK GROUP CODE			
1	1	1	1
0	0	0	0
1	1	1	1
2	2	2	2

EVERYONE WRITE IN
{ CODE 11111.

DARKEN THE CORRESPONDING
NUMBERED OVAL IN EACH COLUMN

PRIMARY AFSC (SEMINAR NUMBER)				
3	0	2		
A	0	0	0	A
B	1	1	1	B
C	2	2	2	C
D	3	3	3	D

YOUR SEMINAR
NUMBER,

LEAVE THESE
COLUMNS BLANK

DARKEN THE
CORRESPONDING NUMBERED
OVAL IN EACH COLUMN

Appendix E

OAP Output Package

ORGANIZATIONAL ASSESSMENT PACKAGE OUTPUT

The Organizational Assessment Package (OAP) was developed for use by the Air Force Leadership and Management Development Center (LMDC), Maxwell AFB, Alabama. The LMDC mission includes (a) providing management consultation services to Air Force commanders, (b) providing leadership and management training to Air Force personnel in their work environment, and (c) performing research in support of (a) and (b). The consultative role involves organizational problem area identification and recommendations for resolving problems identified.

The OAP was designed to support the mission objectives of LMDC. First, the OAP provides a means of identifying existing strengths and weaknesses within organizational work groups and aggregated work groups, such as directorates. Second, research results can be fed back into Professional Military Education curricula; other leadership and management training courses; and when action is required, to Air Staff and functional offices of primary responsibility. Third, the OAP data base established can be used for research to strengthen the overall Air Force organizational effectiveness program.

03

EXTERNALLY CODED DESCRIPTORS

Batch Number

Julian Date of Survey

Major Air Command

Base Code

Consultation Method

Consultant Code

Survey Version

FACTORS

Survey Version: OAP 14 Feb 79

FACTOR: DEMOGRAPHIC (NOT A STATISTICAL FACTOR)

SECTION A

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
-	-	Supervisor's Code
-	-	Work Group Code
-	-	Sex
-	-	Your age is
-	-	You are (officer, enlisted, GS, etc.)
-	-	Your pay grade is
-	-	Primary AFSC
-	-	Duty AFSC

SECTION B

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
003	1	Total years in the Air Force:

1. Less than 1 year

2. More than 1 year, less than 2 years

3. More than 2 years, less than 3 years

4. More than 3 years, less than 4 years

5. More than 4 years, less than 5 years

6. More than 5 years, less than 6 years

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
004	2	<p>Total months in present career field:</p> <ol style="list-style-type: none"> 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
005	3	<p>Total months at this station:</p> <ol style="list-style-type: none"> 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
006	4	<p>Total months in present position:</p> <ol style="list-style-type: none"> 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
007	5	<p>Your Ethnic Group is:</p> <ol style="list-style-type: none"> 1. American Indian or Alaskan Native 2. Asian or Pacific Islander 3. Black, not of Hispanic Origin 4. Hispanic 5. White, not of Hispanic Origin 6. Other
008	11	<p>Which of the following "best" describes your marital status?</p> <ol style="list-style-type: none"> 0. Not married. 1. Married: Spouse is a civilian employed outside home. 2. Married: Spouse is a civilian employed outside home - geographically separated. 3. Married: Spouse not employed outside home. 4. Married: Spouse not employed outside home - geographically separated. 5. Married: Spouse is a military member. 6. Married: Spouse is a military member - geographically separated. 7. Single parent.

NOTE: Variable 008, statement 11 was added to the OAP on 19 Jan 80 and replaced variable 014 which appears on page 3. Although no longer used Variable 014 is still shown because data collected from about 25,000 samples for this variable is still in the data base.

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
009	6	<p>Your highest education level obtained is:</p> <ol style="list-style-type: none"> 1. Non-high school graduate 2. High school graduate or GED 3. Less than two years college 4. Two years or more college 5. Bachelors Degree 6. Masters Degree 7. Doctoral Degree
010	7	<p>Highest level of professional military education (residence or correspondence):</p> <ol style="list-style-type: none"> 0. None or not applicable 1. NCO Orientation Course or USAF Supervisor Course (NCO Phase 1 or 2) 2. NCO Leadership School (NCO Phase 3) 3. NCO Academy (NCO Phase 4) 4. Senior NCO Academy (NCO Phase 5) 5. Squadron Officer School 6. Intermediate Service School (i.e., ACSC, AFSC) 7. Senior Service School (i.e., AWC, ICAF, MMC)
011	8	<p>How many people do you directly supervise?</p> <ol style="list-style-type: none"> 1. None 2. 1 3. 2 4. 3 5. 4 to 5 6. 6 to 8 7. 9 or more
012	9	<p>For how many people do you write performance reports?</p> <ol style="list-style-type: none"> 1. None 2. 1 3. 2 4. 3 5. 4 to 5 6. 6 to 8 7. 9 or more
013	10	<p>Does your supervisor actually write your performance reports?</p> <ol style="list-style-type: none"> 1. Yes 2. No 3. Not sure

VARIABLE
NUMBER

STATEMENT
NUMBER

014

11

STATEMENT

Your work requires you to work primarily:

1. Alone
2. With one or two people
3. As a small work group (3-5 people)
4. As a large work group (6 or more people)
5. Other

What is your usual work schedule?

1. Day shift, normally stable hours
2. Swing shift (about 1600-2400)
3. Mid shift (about 2400-0800)
4. Rotating shift schedule
5. Day or shift work with irregular/unstable hours
6. Frequent TDY/travel or frequently on-call to report to work
7. Crew schedule

016

13

STATEMENT

How often does your supervisor hold group meetings?

1. Never
2. Occasionally
3. Monthly
4. Weekly
5. Daily
6. Continuously

017

14

STATEMENT

How often are group meetings used to solve problems and establish goals?

1. Never
2. Occasionally
3. About half the time
4. All of the time

018

15

STATEMENT

What is your aeronautical rating and current status?

1. Nonrated, not on aircrew
2. Nonrated, now on aircrew
3. Rated, in crew/operations job
4. Rated, in support job

VARIABLE
NUMBER

019

STATEMENT
NUMBER

10

STATEMENT

Which of the following best describes your career or employment intentions?

1. Planning to retire in the next 12 months
2. Will continue in/with the Air Force as a career
3. Will most likely continue in/with the Air Force
4. May continue in/with the Air Force
5. Will most likely not make the Air Force a career
6. Will separate/terminate from the Air Force as soon as possible

FACTORS, 800 SERIES: Each 800 series factor consists of two or more variables which correspond to statements in the OAP. A mean score can be derived for each factor except 805, 807, 808, 809 and 825 by using a "straight average." The formula for computing the exceptions is indicated.

FACTOR 800: SKILL VARIETY

VARIABLE
NUMBER

201

STATEMENT
NUMBER

17

STATEMENT

To what extent does your job require you to do many different things, using a variety of your talents and skills?

212

29

STATEMENT

To what extent does your job require you to use a number of complex skills?

FACTOR 801: TASK IDENTITY

VARIABLE
NUMBER

202

STATEMENT
NUMBER

18

STATEMENT

To what extent does your job involve doing a whole task or unit of work?

211

28

STATEMENT

To what extent does your job provide you with a chance to finish completely the piece of work you have begun?

FACTOR 802: TASK SIGNIFICANCE

VARIABLE NUMBER	STATEMENT NUMBER
--------------------	---------------------

203 To what extent is your job significant in that it affects others in some important way?

210 To what extent does doing your job well affect a lot of people?

FACTOR 803: (NOT USED)

FACTOR 804: JOB FEEDBACK

VARIABLE NUMBER	STATEMENT NUMBER
--------------------	---------------------

272 To what extent are you able to determine how well you are doing your job without feedback from anyone else?

209 To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?

FACTOR 805: WORK SUPPORT

VARIABLE NUMBER	STATEMENT NUMBER
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206 To what extent do additional duties interfere with the performance of your primary job?

207 To what extent do you have adequate tools and equipment to accomplish your job?

208 To what extent is the amount of work space provided adequate?

Formula (8-206+207+208)/3

FACTOR 806: NEED FOR EMPLOYMENT INDEX (JOB DESIRES)

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
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(In my job, I would like to have the characteristics described ---from "not at all" to "an extremely large amount")

249 Opportunities to have independence in my work 51

250 A job that is meaningful 52

251 The opportunity for personal growth in my job 53

252 Opportunities in my work to use my skills 54

253 Opportunities to perform a variety of tasks 55

FACTOR 807: JOB MOTIVATION INDEX

Index is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
805	Performance barriers/blockages
813	Task autonomy
804	Job feedback

Formula $(800-801-802-805)/4 + 813-804$

FACTOR 808: GJI TOTAL SCORE

Score is computed using the variables in the following formula:

$(V201+V202+V203+V270+V271+V272$
 $+8-V206+V207+V208+V209+V210$
 $+V211+V212+V213)$

FACTOR 809: JOB MOTIVATION INDEX ---- ADDITIVE

Index is computed using the following factors:

800	Skill Variety
801	Task Identity
802	Task Significance
803	Performance Barriers/Blockages
813	Task Autonomy
804	Work Repetition

FORMULA: $(800+801+802+803)/4 + 813 + 804$

FACTOR 810: JOB PERFORMANCE GOALS

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
217	34	To what extent do you know exactly what is expected of you in performing your job?
218	35	To what extent are your job performance goals difficult to accomplish?
273	36	To what extent are your job performance goals clear?
274	37	To what extent are your job performance goals specific?
221	38	To what extent are your job performance goals realistic?

FACTOR 811: JOB PERFORMANCE GOALS

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
215	32	To what extent are you proud of your job?
275	46	To what extent does your work give you a feeling of pride?

FACTOR 812: TASK CHARACTERISTICS

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
201	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
202	18	To what extent does your job involve doing a whole task or unit of work?
203	19	To what extent is your job significant, in that it affects others in some important way?
272	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
209	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?
210	27	To what extent does doing your job well affect a lot of people?
211	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?
212	29	To what extent does your job require you to use a number of complex skills?

FACTOR 813: TASK AUTONOMY

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
270	20	To what extent does your job provide a great deal of freedom and independence in scheduling your work?
271	21	To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?
213	30	To what extent does your job give you freedom to do your work as you see fit?
214	31	To what extent are you allowed to make the major decisions required to perform your job well?

FACTOR 814: WORK REPETITION

VARIABLE NUMBER	STATEMENT
226	To what extent do you perform the same tasks repeatedly within a short period of time?
227	To what extent are you faced with the same type of problem on a weekly basis?

FACTOR 815: (NOT USED)

FACTOR 816: DESIRED REPETITIVE EASY TASKS

VARIABLE NUMBER	STATEMENT
255	A job in which tasks are repetitive.
258	A job in which tasks are relatively easy to accomplish.

FACTOR: JOB INFLUENCES (NOT A STATISTICAL FACTOR)

VARIABLE NUMBER	STATEMENT
216	To what extent do you feel accountable to your supervisor in accomplishing your job?
238	To what extent do co-workers in your work group maintain high standards of performance?

FACTOR 817: ADVANCEMENT/RECOGNITION

VARIABLE NUMBER	STATEMENT
234	To what extent are you aware of promotion/advancement opportunities that affect you?
239	To what extent do you have the opportunity to progress up your career ladder?

240	44	To what extent are you being prepared to accept increased responsibility?
241	45	To what extent do people who perform well receive recognition?
276	47	To what extent do you have the opportunity to learn skills which will improve your promotion potential?

FACTOR 818: MANAGEMENT - SUPERVISION (A)

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
404	58	My supervisor is a good planner
405	59	My supervisor sets high performance standards
410	60	My supervisor encourages teamwork
411	61	My supervisor represents the group at all times
412	62	My supervisor establishes good work procedures.
413	63	My supervisor has made his responsibilities clear to the group
445	64	My supervisor fully explains procedures to each group member
416	65	My supervisor performs well under pressure

FACTOR: MANAGEMENT - SUPERVISION (B) (NOT A STATISTICAL FACTOR)

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
424	66	My supervisor takes time to help me when needed
434	71	My supervisor lets me know when I am doing a poor job
439	75	When I need technical advice, I usually go to my supervisor

FACTOR 219: SUPERVISORY COMMUNICATIONS CLIMATE

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
426	67	My supervisor asks members for their ideas on task improvements
429	68	My supervisor explains how my job contributes to the overall mission
431	69	My supervisor helps me set specific goals
432	70	My supervisor lets me know when I am doing a good job
435	72	My supervisor always helps me improve my performance
436	73	My supervisor insures that I get job related training when needed
437	74	My job performance has improved due to feedback received from my supervisor
442	76	My supervisor frequently gives me feedback on how well I am doing my job

FACTOR 220: ORGANIZATIONAL COMMUNICATIONS CLIMATE

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
444	82	Ideas developed by my work group are readily accepted by management personnel above my supervisor
445	83	My organization provides all the necessary information for me to do my job effectively
447	84	My organization provides adequate information to my work group
448	85	My work group is usually aware of important events and situations
449	86	My complaints are aired satisfactorily
450	91	The information in my organization is widely shared so that those needing it have it available

314	96	My organization has clear-cut goals
317	99	The goals of my organization are reasonable
318	100	My organization provides accurate information to my work group

FACTOR 821: WORK GROUP EFFECTIVENESS

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
259	77	The quantity of output of your work group is very high
260	78	The quality of output of your work group is very high
261	79	When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations
264	80	Your work group always gets maximum output from available resources (e.g., personnel and material)
265	81	Your work group's performance in comparison to similar work groups is very high

FACTOR: WORK INTERFERENCES (NOT A STATISTICAL FACTOR)

VARIABLE NUMBER	STATEMENT NUMBER	STATEMENT
277	48	To what extent do you have the necessary supplies to accomplish your job?
278	49	To what extent do details (task not covered by primary or additional duty descriptions) interfere with the performance of your primary job?
279	50	To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?

FACTOR 822: JOB RELATED SATISFACTION

VARIABLE NUMBER	STATEMENT
705	101 Feeling of Helpfulness The chance to help people and improve their welfare through the performance of my job. The importance of my job performance to the welfare of others.
709	102 Co-worker Relationships My amount of effort compared to the effort of my co-workers, the extent to which my co-workers share the load, and the spirit of teamwork which exists among my co-workers.
710	103 Family Attitude Toward Job The recognition and the pride my family has in the work I do.
717	106 Work Schedule My work schedule; flexibility and regularity of my work schedule; the number of hours I work per week.
718	107 Job Security
719	108 Acquired Valuable Skills The chance to acquire valuable skills in my job which prepare me for future opportunities.
723	109 My Job as a Whole

FACTOR 823: JOB RELATED TRAINING

VARIABLE NUMBER	STATEMENT
711	104 On-the-Job Training (OJT) The OJT instructional methods and instructors' competence.
712	105 Technical Training (Other than OJT) The technical training I have received to perform my current job.

FACTOR 824: GENERAL ORGANIZATIONAL CLIMATE

VARIABLE NUMBER	STATEMENT
305	87 My organization is very interested in the attitudes of the group members toward their jobs.
306	88 My organization has a very strong interest in the welfare of its people.
307	89 I am very proud to work for this organization.
308	90 I feel responsible to my organization in accomplishing its mission.
310	92 Personnel in my unit are recognized for outstanding performance.
311	93 I am usually given the opportunity to show or demonstrate my work to others.
312	94 There is a high spirit of teamwork among my co-workers.
313	95 There is outstanding cooperation between work groups of my organization.
315	97 I feel motivated to contribute my best efforts to the mission of my organization.
316	98 My organization rewards individuals based on performance.

FACTOR 825: MOTIVATION POTENTIAL SCORE

Score is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
804	Job feedback
813	Task autonomy

Formula $((800+801+802)/3) * 813 * 804$

Value range will be from 1 to 343.

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